I. AMENDMENTS

IN THE CLAIMS

Cancel claims 8, 22, and 27-29 without prejudice to renewal.

Please enter the amendments to claims 1, 9, 11, 21, and 23, as shown below.

Please enter new claims 30-35, as shown below.

1. (Currently Amended) A calorimetric device comprising

a) a U-shaped calorimeter tube having an inlet end and an outlet end, and mounted onto a support at the inlet end and the outlet end; and

b) a sensor**, wherein the calorimeter tube comprises a sensor layer that detects a temperature change in the calorimeter tube**.

2. (Previously presented) The device of claim 1, wherein the sensor detects temperature input into the calorimeter tube and/or temperature output from the calorimeter tube required to maintain the calorimeter tube at a substantially constant temperature.

3. (Previously presented) The device of claim 1, further comprising a coating layer on the calorimeter tube, wherein the coating layer provides for mechanical bending of the calorimeter tube in response to a temperature change within the calorimeter tube.

4. (Previously presented) The device of claim 1, further comprising a coating layer on the calorimeter tube, wherein the coating layer provides a means of detecting a change in electrical properties of the coating layer in response to a temperature change within the calorimeter tube.

5. (Previously presented) The device of claim 1, further comprising a reflector mounted onto the calorimeter tube.

6. (Original) The device of claim 1, wherein the device detects temperature changes in the range of from about 1 pJ to about 1000 pJ.

7. (Previously presented) The device of claim 1, wherein the calorimeter tube has a total volume capacity in a range of from about 1 μl to about 1 ml.

8. (Cancelled)

9. (Currently Amended) The device of claim [[8]] **1**, wherein the sensor layer is selected from a thermistor, a piezoelectric material, and a piezoresistive material.

10. (Canceled)

11. (Currently Amended) The device of claim [[10]] **1**, wherein the calorimeter tube is enclosed in a vacuum.

12. (Original) An array comprising a plurality of the device of claim 1.

13. (Original) The array of claim 12, further comprising a data storage means.

14. (Original) The array of claim 12, further comprising a data analysis means.

15. (Previously presented) A method of detecting a temperature change that occurs in a process, the method comprising

introducing a sample comprising a chemical reactant, a biological entity, or a macromolecule into the device of claim 1; and

detecting a temperature change in the calorimeter tube.

16. (Original) The method of claim 15, wherein the process is selected from a chemical reaction, a biochemical reaction, a binding reaction, a physical process, a light-induced process, and a biological reaction.

17. (Previously presented) The method of claim 15, wherein the device comprises a reflector mounted on the calorimeter tube, and wherein said detecting comprises detecting a light beam reflected from the reflector.

18. (Original) The method of claim 17, wherein the detecting is by a charged coupled device.

19. (Previously presented) The method of claim 15, wherein said detecting comprises detecting bending of the calorimeter tube.

20. (Original) The method of claim 19, wherein said detecting is by a capacitor.

21. (Currently Amended) A calorimetric device comprising

a) a U-shaped reaction vessel having an inlet and an outlet, and mounted onto a support at or near the inlet and the outlet; [[and]]

b) a sensor, wherein the sensor detects temperature input into the reaction vessel and/or temperature output from the vessel required to maintain the reaction vessel at a substantially constant temperature**; and**

an integrated heating device used to heat the reaction vessel and maintain a substantially constant temperature based on the detected temperature input and/or output.

22. (Cancelled)

23. (Currently Amended) The calorimetric device of claim [[22]] **21**, wherein the integrated heating device also functions as a temperature sensing element and/or a thermo-mechanical transducer.

24. (Previously presented) The calorimetric device of claim 21, wherein the reaction vessel is heated by application of an electrical current through a coating layer on the reaction vessel.

25. (Previously presented) The calorimetric device of claim 24, wherein the electrical current applied through the coating layer is changed to maintain a constant deflection of the reaction vessel.

26. (Previously presented) The calorimetric device of claim 24, wherein the electrical current applied through the coating layer is changed to maintain a constant thermistor resistance.

27-29. (Cancelled)

30. (New) A method of detecting a temperature change that occurs in a process, the method comprising

introducing a sample comprising a chemical reactant, a biological entity, or a macromolecule into the device of claim 21; and

detecting a temperature change in the reaction vessel.

31. (New) The method of claim 30, wherein the process is selected from a chemical reaction, a biochemical reaction, a binding reaction, a physical process, a light-induced process, and a biological reaction.

32. (New) The method of claim 30, wherein the device comprises a reflector mounted on the reaction vessel, and wherein said detecting comprises detecting a light beam reflected from the reflector.

33. (New) The method of claim 32, wherein the detecting is by a charged coupled device.

34. (New) The method of claim 30, wherein said detecting comprises detecting bending of the reaction vessel.

35. (New) The method of claim 34, wherein said detecting is by a capacitor.